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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,007	07/15/2003	Scott Davis	944-015.002	9112

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EXAMINER
HAN, QI

ART UNIT	PAPER NUMBER
2626	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	Applicant(s)
Office Action Summary	10/621,007	DAVIS, SCOTT
	Examiner	Art Unit	
	Qi Han	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 July 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Specification and Drawing

1.   The disclosure is objected to because of the following informalities:

a.   On page 2, paragraph 5, the terms "anther example" appears to be –another

example--. Appropriate correction is required.

b.   On page 13, paragraph 47, the referenced number 700 is not shown in the

corresponding drawing of Fig. 7. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claim 8-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

Regarding claim 8, it recites the limitation **"the real-time input entry ..."** in the claim.

There is insufficient antecedent basis for this limitation in the claim. As best understood in view

of the claims, this claim will be interpreted as "The system of claim 5 (not claim 1)..."

hereinafter.

Regarding claim 9, it recites the limitation **"the real-time input entry ..."** in the claim.

There is insufficient antecedent basis for this limitation in the claim. As best understood in view

of the claims, this claim will be interpreted as "The system of claim 5 (not claim 1)..."

hereinafter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 1-3, 10-13 and 17-21 are rejected under 35 U.S.C. 102(e) as being anticipated by

CHUA (US 2004/0183833 A1).

As per **claim 1**, CHUA discloses 'keyboard error reduction method and apparatus' (title)

for 'small portable devices, such as mobile telephones, personal digital assistants (PDA)'

adopting 'various method for entering symbols or data into them', such as 'voice recognition,

hand writing recognition' (paragraph (hereinafter referenced as p) 3), comprising:

"an input component receives a user input to be recognized" (p2, 'such screens are not

just used… to display data to user, but also as means (input component) for the user to input

(receive) data');

"a recognition component that analyzes the user input and identifies a subset of virtual

key of a plurality of available virtual keys to concurrently convey to a user during the user

input", (p3, 'voice recognition', 'hand writing recognition' (recognition component); p7,

'receiving input data identifying the selected position, indicated during the selection operation,

and deciding on at least one candidate of the selected position relative to the representative

position of a second plurality of the selectable portions (corresponding to a plurality of available

virtual keys'; p17, 'mobile telephone with virtual keyboard and a touch screen', 'virtual keys',

'these candidate keys are then used to provide a set of potential words that would result from the

input of any one of those keys'; p21-p23, 'the user touches one of the words (corresponding

virtual keys) in the list display area 26 and the selected word then appears in the message line

24'; also see Fig.1);

"a rendering component that displays the subset of virtual keys to the user concurrently

with receiving the user input", (p21-p23, 'the user touches one of the words (subset of virtual

keys) in the list display area 26 and the selected word (receiving the user input) then appears

(display) in the message line 24').

As per **claim 2** (depending on claim 1), CHUA further discloses "the input entry being

voice" (p3, 'various method for entering symbols or data into them…voice recognition').

As per **claim 3** (depending on claim 1), CHUA further discloses "the input entry being

handwriting" (p3, 'various method for entering symbols or data into them…hand writing

recognition').

As per **claim 10** (depending on claim 1), CHUA further discloses "displaying N virtual

keys, N being an integer, and N being a function of confidence associated with the analysis"

(p81-105, 'the top six (N=6) scoring Wfreq (corresponding to function of confidence associated

with the analysis) words for any possibility are chosen', 'the list… containing the top six

candidate strings in score order', 'this list of words is then displayed').

As per **claim 11** (depending on claim 10), CHUA further discloses "the virtual keys

being dynamically determined and/or inferred" (Fig. 1 and p81-105, wherein the content of the

list display area 26 is changed based on input data, so as being dynamically determined and/or

inferred as claimed).

As per **claim 12**, it recites a portable communication device. The rejection is based on

the same reason described for claim 1, because the claim recites the same or similar limitation(s)

as claim 1, wherein the mobile telephone disclosed by CHUA is read on the claimed portable

communication device.

As per **claim 13**, it recites a portable computing device. The rejection is based on the

same reason described for claim 1, because the claim recites the same or similar limitation(s) as

claim 1, wherein the PDA disclosed by CHUA is read on the claimed portable computing device.

As per **claim 17**, it recites a portable computing device recognition method. The

rejection is based on the same reason described for claim 1, because the claim recites the same or

similar limitation(s) as claim 1.

As per **claim 18** (depending on claim 17), the rejection is based on the same reason

described for claim 3, because the claim recites the same or similar limitation(s) as claim 3.

As per **claim 19** (depending on claim 17), the rejection is based on the same reason

described for claims 10-11, because the claim recites the same or similar limitation(s) as claims

10-11.

As per **claim 20**, it recites a computer readable medium having stored computer

executable instructions. The rejection is based on the same reason described for claim 17,

because the claim recites the same or similar limitation(s) as claim 17.

As per **claim 21**, it recites portable computing device recognition system. The rejection

is based on the same reason described for claim 1, because the claim recites the same or similar

limitation(s) as claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such
> that the subject matter as a whole would have been obvious at the time the invention was made to a person having
> ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in
> which the invention was made.

4.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over CHUA in view of

LEWIS et al. (US 6,826,306) hereinafter referenced as LEWIS.

As per **claim 4** (depending on claim 1), CHUA does not expressly disclose "a data store

having stored thereon a plurality of user profiles that the recognition component employs in

connection with the analysis". However, the feature is well known in the art as evidenced by

LEWIS who discloses 'system and method for automatic quality assurance of user enrollment in

a recognition system' (title), comprising 'conventional recognition system (e.g. handwriting and

speech)' including 'memory 14 for storing text data and enrollment data (which is collected and

stored for one or more users)' that 'is utilized during user enrollment to train user-dependent

prototypes 22 (statistical model) …for a given data recognition system' (col. 3, lines 14-53), and

allowing 'a user to create a "user profile" during the initial phase of user enrollment…' and 'user

profile …determined to be specific to the user and automatically applied by the recognition

engine …', (col. 5, lines 19-32), which suggests that one or more users can be enrolled in the

recognition system and each user can have his own user profile, as claimed. Therefore, it would

have been obvious to one of ordinary skill in the art at the time the invention was made to

modify CHUA by providing a mechanism for storing user profiles for a recognition system, as

taught by LEWIS, for the purpose (motivation) of providing automatic quality assurance of a

user enrollment in a recognition system (LEWIS: col. 2, lines 27-28).

5.   Claims 5-6, 8-9 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

CHUA in view of LYON (US 6,480,621).

        As per **claim 5** (depending on claim 1), CHUA does not expressly disclose "the

recognition component utilizing an artificial intelligence component providing inference of

possible real-time input entry". However, the feature is well known in the art as evidenced by

LYON who discloses 'statistical classifier with reduced weight memory requirements' (title),

and teaches that 'adaptive statistical classifiers are used for applications such as speech

recognition, handwriting recognition and optical character recognition', 'in a handwriting

recognition system, the input unit 12 can be any conventional device for capturing handwriting

text such as optical character recognition (OCR) device or a digital tablet', 'in addition, for

speech recognition, the input unit 12 may be a microphone' (col. 1, lines 30-33), including 'run-

time (real time) operation of the classifier' using 'neural networks, Bayesian a posteriori

probabilities, and pattern classification' and 'hybrid HMM/connectionist approach'

(corresponding to artificial intelligence) (col. 2, lines 44-62), and providing 'real time

recognition of handwriting' having 'training a mode to tune the operation of the classifier for a

particular user' (col. 15, lines 10-12). Therefore, it would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify CHUA by providing real time

recognition for handwriting and/or speech with artificial intelligence approach, as taught by

LYON, for the purpose (motivation) of reducing error for classifier outputs and/or improving

recognition results (LYON: col. 3, lines 49-67).

As per **claim 6** (depending on claim 5), the rejection is based on the same reason

described for claim 5, because the rejection for claim 5 covers the same or similar limitation(s)

as claim 6.

As per **claim 8** (depending on claim 5), CHUA in view of LYON further discloses "the

recognition component utilizing a starting point of the real-time input entry for determination

and/or inference", (CHUA: Fig. 2 and p22, 'touch screen circuit 30' with 'horizontal and vertical

sensors' that 'are arranged to detect the point of contact, the selected position, of a touch on the

tough screen', which necessarily and/or inherently includes starting point and/or end point for the

input, as claimed).

As per **claim 9** (depending on claim 5), the rejection is based on the same reason

described for claim 8, because the rejection for claim 8 covers the same or similar limitation(s)

as claim 9.

As per **claim 14** (depending on claim 1), the rejection is based on the same reason

described for claim 5, because the rejection for claim 5 covers the same or similar limitation(s)

as claim 14.

As per **claim 15** (depending on claim 1), the rejection is based on the same reason

described for claim 5, because the rejection for claim 5 covers the same or similar limitation(s)

as claim 15.

As per **claim 16** (depending on claim 15), the rejection is based on the same reason

described for claim 5, because the rejection for claim 5 covers the same or similar limitation(s)

as claim 16.

6.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over CHUA in view of

LYON as applied to claim 5, and further in view of LEWIS.

        As per **claim 7** (depending on claim 5), even though CHUA in view of LYON discloses

the artificial intelligence component (as stated for claim 5, see above), CHUA in view of LYON

does not expressly disclose "contemplating and/or accounting for quality-deterioration of the

real-time input". However, the feature is well known in the art as evidenced by LEWIS who

discloses 'system and method for automatic quality assurance of user enrollment in a recognition

system' (title), comprising 'checks the quality of a new enrollment (real time input)' (col. 2, lines

31-32), using 'conventional recognition system (e.g. handwriting and speech)', 'for real time

digitization and recognition', including processing 'handwriting data' on 'the input device at

successive points in time (which is generated with an "online"/ "dynamic" pen-based computer)'

(col. 3, lines 13-49). LYON also discloses the enrollment data is utilized...to train user-

dependent prototypes 22 (statistical model) (col. 3, lines 50-59) that corresponds to the artificial

intelligence component, which further supports the claim rejection. Therefore, it would have

been obvious to one of ordinary skill in the art at the time the invention was made to modify

CHUA by providing a mechanism for checking quality of enrollment data by using the artificial

intelligence component (such as statistical model) for a recognition system, as taught by LEWIS,

for the purpose (motivation) of providing automatic quality assurance of a user enrollment in a

recognition system (LEWIS: col. 2, lines 27-28).

Conclusion

7.   Please address mail to be delivered by the United States Postal Service (USPS) as
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Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Qi Han whose telephone numbers is (571) 272-7604. The
examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7:30 p.m. If
attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,
Richemond Dorvil, can be reached on (571) 272-7602.

Information regarding the status of an application may be obtained from the Patent
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